



**US Army Corps
of Engineers®**
Engineer Research and
Development Center

Coastal Field Data Collection

Southern California Beach Processes Study (SCBPS)

Problem Planning for shoreline protection, beach maintenance, coastal inlet dredging and related engineering activities requires a regional understanding of the coastal processes extending tens of miles up and down coast from an individual project. Techniques of observations and modeling that are economical and effective for small stretches of coastline are not necessarily useful for regional coastline management. There are substantial differences between coastal regions resulting from differing wave climates and geology, necessitating the evaluation of regional management tools in a variety of locations. In particular, the narrow continental shelves, swell-dominated wave climates and cliff-backed beaches of Southern California require the investigation of regional management techniques that meet the unique needs of this populous region.

Research Approach Coastal processes and beach changes are monitored along a 120-mile-long region extending from the Mexican border to Long Beach, CA. SCBPS monitoring involves airborne LIDAR to systematically and rapidly map beach and cliff changes, twice per year. At certain focus areas, in-situ surveys using GPS-equipped all terrain vehicles and jetskis are also performed. These data are combined with wave data collected by the Coastal Data Information Program (CDIP) to analyze process/response relationships. SCBPS complements the Corps Regional Sediment Management research program and contributes to the National Coastal Mapping Program of the interagency Integrated Ocean Observing System (IOOS).

Labs/others involved This project is performed by the Scripps Institution of Oceanography in collaboration with the State of California and the Engineer Research and Development Center and in partnership with the Los Angeles District of the US Army Corps of Engineers.

Final Products Collected LIDAR survey data (since FY02), combined with CDIP data are used to make sediment management decisions within the study area (11 USACE projects), and to develop analysis tools. Data are disseminated in compatible formats to the USACE, NOAA/CSC and USGS. The predictive model correlating gradients in radiation stress with shoreline change will be documented in journal and conference papers.

Point of Contact William Birkemeier, William.Birkemeier@erdc.usace.army.mil
Coastal and Hydraulics Laboratory, ERDC, Duck, NC 27949

SCBPS website: <http://cdip.ucsd.edu>